

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 412043

Fluid

Component
Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS	

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

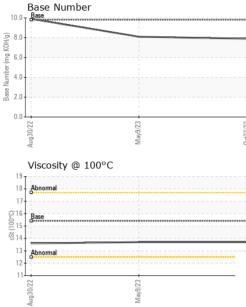
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0086739	GFL0071264	GFL0056048
Sample Date		Client Info		23 Oct 2023	09 May 2023	30 Aug 2022
Machine Age	hrs	Client Info		5206	4105	2309
Oil Age	hrs	Client Info		5206	4105	2309
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	8	10	8
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	<1	0
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	2	1	2
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	ppm	ASTM D5185m	>330	1	<1	12
Tin	ppm	ASTM D5185m	>15	<1	<1	1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		mathad	limit/base		In the transmission	biotory ()
ADDITIVES		method	iimii/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0	nistory i 1	6
	ppm ppm					
Boron		ASTM D5185m	0	0	1	6
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	0 0	1 0	6 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 0 61	1 0 58	6 0 62
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 0 61 <1	1 0 58 <1	6 0 62 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	0 0 61 <1 1001	1 0 58 <1 973	6 0 62 <1 902
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	0 0 61 <1 1001 1102	1 0 58 <1 973 1080	6 0 62 <1 902 1049
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	0 0 61 <1 1001 1102 1098	1 0 58 <1 973 1080 1040	6 0 62 <1 902 1049 974
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	0 0 61 <1 1001 1102 1098 1304	1 0 58 <1 973 1080 1040 1304	6 0 62 <1 902 1049 974 1190
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	0 0 61 <1 1001 1102 1098 1304 2846	1 0 58 <1 973 1080 1040 1304 3629	6 0 62 <1 902 1049 974 1190 3348
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	0 0 61 <1 1001 1102 1098 1304 2846 current	1 0 58 <1 973 1080 1040 1304 3629 history1	6 0 62 <1 902 1049 974 1190 3348 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	0 0 61 <1 1001 1102 1098 1304 2846 current 3	1 0 58 <1 973 1080 1040 1304 3629 history1 3	6 0 62 <1 902 1049 974 1190 3348 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base >25	0 0 61 <1 1001 1102 1098 1304 2846 <u>current</u> 3 3	1 0 58 <1 973 1080 1040 1304 3629 history1 3 2	6 0 62 <1 902 1049 974 1190 3348 history2 3 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	0 0 61 <1 1001 1102 1098 1304 2846 current 3 3 3 3	1 0 58 <1 973 1080 1040 1304 3629 history1 3 2 3	6 0 62 <1 902 1049 974 1190 3348 history2 3 2 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	0 0 61 <1 1001 1102 1098 1304 2846 current 3 3 3 3 3	1 0 58 <1 973 1080 1040 1304 3629 history1 3 2 3 3 history1	6 0 62 <1 902 1049 974 1190 3348 history2 3 2 5 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	0 0 61 <1 1001 1102 1098 1304 2846 <u>current</u> 3 3 3 3 <u>3</u> <u>current</u>	1 0 58 <1 973 1080 1040 1304 3629 history1 3 2 3 1 2 3 3 <i>history1</i> 0.4	6 0 62 <1 902 1049 974 1190 3348 history2 3 2 5 history2 0.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	0 0 61 <1 1001 1102 1098 1304 2846 <i>current</i> 3 3 3 3 <i>current</i> 0.4 7.9	1 0 58 <1 973 1080 1040 1304 3629 history1 3 2 3 1 2 3 <i>history1</i> 0.4 8.1	6 0 62 <1 902 1049 974 1190 3348 history2 3 2 5 history2 0.3 8.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >4 >20	0 0 61 <1 1001 1102 1098 1304 2846 <u>current</u> 3 3 3 3 3 <u>current</u> 0.4 7.9 20.0	1 0 58 <1 973 1080 1040 1304 3629 history1 3 2 3 history1 0.4 8.1 20.0	6 0 62 <1 902 1049 974 1190 3348 history2 3 2 5 <u>history2</u> 0.3 8.0 20.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 2260 2060 225 220 220 1000 225 20 220 20 20 20 20 20 20 20 20 20 20 20	0 0 61 <1 1001 1102 1098 1304 2846 <i>current</i> 3 3 3 3 <i>current</i> 0.4 7.9 20.0	1 0 58 <1 973 1080 1040 1304 3629 history1 3 2 3 2 3 history1 0.4 8.1 20.0 history1	6 0 62 <1 902 1049 974 1190 3348 history2 3 2 5 history2 0.3 8.0 20.4 history2



OIL ANALYSIS REPORT

VISUAL



THE LABORATORY	Laboratory Sample No. Lab Number Unique Number Test Package	: WearCheck USA - : GFL0086739 : 06003961 : 10737723 : FLEET	3 GFL Env	GFL Environmental - 932 - Muskego H W144 S6400 College C Muskego, W US 5315 Contact: Brian Schloman brian.schlomann@gflenv.cor				
		Base Base Abnormal	May9/223		8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	0	May9/23	
		Non-ferrous Meta	Way923			Base Number		
Mar/9/23		Ferrous Alloys	(13)					
		FLUID PROPE Visc @ 100°C GRAPHS	ERTIES cSt	method ASTM D445	limit/base 15.4	current 13.7	history1 13.7	history2 13.6
		Emulsified Water Free Water	scalar scalar	*Visual *Visual	>0.2	NEG NEG	NEG NEG	NEG NEG
May9/23	0ct23/23	Appearance Odor	scalar scalar	*Visual *Visual	NORML NORML	NORML NORML	NORML NORML	NORML NORML
		Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
		Silt Debris	scalar scalar	*Visual *Visual	NONE NONE	NONE NONE	NONE NONE	NONE
		Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

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